Patent Application Serial No. 10/691,153
Reply to March 18, 2008 Office Action

Docket No. 1232-5181
Amdt. Dated: June 13, 2008

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

Claim 1 (currently amended): A signal processing apparatus comprising:

an image sensing device which has a plurality of photoelectric conversion elements covered with a color filter;

a driver which drives said image sensing device in a first reading mode of separately reading signals from respective lines of photoelectric conversion elements and a second reading mode of reading all signals in one scan by adding signals generated by the lines of photoelectric conversion elements by at least two signals corresponding to the photoelectric conversion elements of a same color in every other line then outputting lines of the added signals, a color order of the added signals being the same as a color order of the signals before being added, in said second reading mode, a spatial distance between the barycenters of first and second lines, adjacent to each other, of the added signals being different from a spatial distance between barycenters of the second line and of a third line of the added signals that is adjacent to said second line;

a switch that switches between the first reading mode and the second reading mode; and

a correction unit that passes signals inputted from the image sensing device without correcting positions of barycenters of the inputted lines of signals when the first reading mode is set, and corrects positions of barycenters of the inputted lines of added signals so that the spatial distances between barycenters of the first to third lines becomes equal when the second reading mode is set.

1147311 v1

Claim 2 (canceled):

Claim 3 (original):   The signal processing apparatus according to claim 1, further comprising a signal processing unit that applies camera signal processes suitable for signals whose color order is the same as that of the color filter to the signals outputted from said correction unit.

Claim 4 (previously presented):   The signal processing apparatus according to claim 1, wherein said color filter has a Bayer arrangement of the three primary colors.

Claim 5 (original):   The signal processing apparatus according to claim 4, wherein, when letting signals in an even number line and signals in an odd number line subjected to the correction by said correction unit be P_{2n} and P_{2n-1} (n is a natural number), respectively, and letting corrected signals in an even number line be P'_{2n} and corrected signals in an odd number line be P'_{2n-1}, said correction unit performs operations of:

$P'_{2n} = 1/8 \times P_{2n-2} + 7/8 \times P_{2n}$ and

$P'_{2n-1} = 7/8 \times P_{2n-1} + 1/8 \times P_{2n+1}$

Claim 6 (original):   An image sensing apparatus comprising:

an image sensing device;

a driving unit that drives said image sensing device; and

the image processing apparatus according to claim 1.

Claim 7 (currently amended):   A signal processing method for processing an image signal outputted from an image sensing device which has a plurality of photoelectric conversion

elements covered with a color filter and which can be driven in a first reading method of separately reading signals from respective lines of photoelectric conversion elements and a second reading method of reading all signals in one scan by adding signals generated by the lines of photoelectric conversion elements by at least two signals corresponding to the photoelectric conversion elements of a same color in every other line then outputting lines of the added signals, a color order of the added signals being the same as a color order of the signals before being added, in said second reading method, a spatial distance between barycenters of first and second lines, adjacent to each other, of the added signals being different from a spatial distance between the barycenters of the second line and of a third line of the added signals that is adjacent to said second line, comprising:

determining which of the first reading method and the second reading method is set; and

correcting positions of the barycenters of the lines of signals inputted from the image sensing device so that the spatial distances between the barycenters of the first to third lines becomes equal when the second reading method is set.

Claim 8 (canceled):

Claim 9 (original): The signal processing method according to claim 7, further comprising applying camera signal processes suitable for signals whose color order is the same as that of the color filter to the signals outputted from said correction unit.

Claim 10 (previously presented): The signal processing method according to claim 7, wherein said color filter has a Bayer arrangement of the three primary colors.

Patent Application Serial No. 10/691,153
Reply to March 18, 2008 Office Action

Docket No. 1232-5181
Amdt. Dated: June 13, 2008

Claim 11 (original): The signal processing method according to claim 10, wherein, when letting signals in an even number line and signals in an odd number line subjected to the correction by said correction unit be P_{2n} and P_{2n-1} (n is a natural number), respectively, and letting corrected signals in an even number line be P'_{2n} and corrected signals in an odd number line be P'_{2n-1}, operations of:

$P'_{2n} = 1/8 \times P_{2n-2} + 7/8 \times P_{2n}$ and

$P'_{2n-1} = 7/8 \times P_{2n-1} + 1/8 \times P_{2n+1}$

are performed in said correcting.

Claim 12 (original): A storage medium, readable by an information processing apparatus, storing a program including program codes capable of realizing the signal processing method according to claim 7, the program being executable by the information processing apparatus.

1147311 v1